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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,378	02/06/2006	Enrico Calamai	6097P070	4610

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EXAMINER

COMLEY, ALEXANDER BRYANT

ART UNIT	PAPER NUMBER
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3746

MAIL DATE	DELIVERY MODE
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07/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,378	Applicant(s) CALAMAI, ENRICO	
	Examiner ALEXANDER B. COMLEY	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "First Display Message 39". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 3, & 5** are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5,209,076 to Kauffman et al. directed to a Control System for Preventing Compressor Damage in a Refrigeration System.

Regarding Independent **Claims 1 & 3**, Kauffman discloses a microprocessor-based compressor control device that detects abnormalities in the compressor's operation. In particular, Kauffman states "If a sensed condition is outside of a safety range and remains there for a time out period, an alarm condition is indicated and the device generates an alarm signal and shuts down the compressor." (Abstract)

Furthermore, Kauffman discloses the steps of receiving operation signals, comparing them to critical values, and sending a corresponding operation signal based on the comparison by stating "In accordance with the invention, a microprocessor based monitoring device makes use of sensors which detect various conditions at selected locations in a refrigeration system. Pressure and temperature sensors on the suction side of the compressor provide information that allows the superheat to be computed. High and low safety limits for the superheat of the particular refrigerant can be entered. If the actual superheat falls outside of the programmed safety range, the compressor is automatically shut off and alarm signals are generated to indicate the presence of problem conditions." (Column 1, Line 64 – Column 2, Line 6)

In regards to dependent **Claim 5**, Kauffman further discloses the use of at least one sensor corresponding to one of the operation parameters of the compressor. In particular, Kauffman states "Sensors in the refrigeration system sense conditions such as refrigerant pressure and temperature, superheat, oil pressure and motor current draw." (Abstract)

Kauffman also discloses the particular kinds of sensors used in the system by stating "Additional sensors monitor conditions such as the compressor discharge pressure and temperature, motor current draw and oil pressure. Again, safety limits are entered and

the device automatically shuts down the compressor and provides an alarm signal if the system is operating outside of a safe operating range with respect to any of the conditions that are being monitored.” (Column 2, Lines 7-13)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 2 & 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,209,076 to Kauffman et al. directed to a Control System for Preventing Compressor Damage in a Refrigeration System in view of United States Patent No. 6,448,982 to Klapper et al. directed to a System for Graphically Generating Logic for a Cause and Effects Matrix.

In regards to dependent **Claims 2 & 4**, the Klapper et al. portion of the combination specifically discloses the use of a "cause-and-effect" matrix for use in a

monitoring system. Klapper specifically discloses a matrix database and corresponding digital computer by stating "The system includes a general purpose digital computer that incorporates a matrix programming tool to input data defining the matrix and generate a matrix database. The tool also transfers the matrix database to a programmable logic controller." (Abstract) Furthermore, with particular reference to Figure 1 of Klapper, it can be seen the multiple critical limits are placed in each row of the matrix with corresponding descriptions of the specific corresponding anomalies. Some examples of Klapper's system anomalies include high process flow and high or low fuel pressures. Klapper goes on to describe the structure of the control matrix by stating "The present invention enables a user to graphically create and configure a matrix with data that defines input elements or variables that require monitoring, output responses to changes in the input elements/variables, also referred to as input parameters, being monitored and the relationship between the input elements/variables and the output responses. Once the matrix is created, the user can transfer the defining data to a programmable logic controller 78 to generate logic to implement the matrix. The programmable logic controller 78, as illustrated in FIG. 2 may comprise a central processing unit 7, an input device 9, an output device 11, and a memory element 13. The memory element 13 may be a combination of read only memory (ROM) and random access memory (RAM)." (Column 3, Lines 40-53) Klapper further states that a user can add specific anomalies to the matrix in order to monitor various desired aspects of the system. Therefore, to one of ordinary skill desiring a more accurately controlled compressor system, it would have been obvious to utilize the techniques

disclosed in Kauffman in combination with those seen in Klapper et al in order to obtain such a result. Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the microprocessor of Kauffman with the anomaly-specific matrix of Klapper et al. in order to obtain predictable results; those results being a more accurately controlled compressor system that monitors specific operation anomalies.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following selected patents and technical literature is cited to further show the state of the art in vacuum-generating unit and related technology in general where the not all obvious salient features of the patents are disclosed as follows:

- US Patent Application Publication No. 2001/0022938 to Blotenberg discloses a system for protecting a turbocompressor and maintain a safe operation condition. A control matrix is utilized as well, from which the valve positions are directly determined.
- US Patent No. 4,502,833 to Hibino et al. discloses a screw compressor monitoring system that utilizes a plurality of sensors to monitor the specific temperature, pressure, etc conditions of the compressor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER B. COMLEY whose telephone number is (571)270-3772. The examiner can normally be reached on M-F 7:30am - 5:00am EST

(Alternate Fridays Off). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon C. Kramer can be reached on (571)-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander B Comley/
Examiner, Art Unit 3746

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

ABC